Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) A system for injecting spin-based electrons into silicon, comprising:

a ferromagnetic metal contact capable of transmitting carriers having a primary spin polarization; and

a silicide layer positioned between the ferromagnetic metal contact and the silicon, the silicide layer making ohmic contact with the silicon such that the spin-polarized carriers transmitted from the ferromagnetic metal contact can be injected into the silicon without altering the primary spin polarization.

2. (Original) A system according to claim 1, further comprising:

a silicon substrate, the silicide layer being disposed on a surface of the silicon substrate and acting as a tunneling junction between the ferromagnetic metal contact and the silicon substrate.

3. (Original) A system according to claim 1, wherein:

the ferromagnetic metal contact and silicide layer form a source electrode.

4. (Original) A system according to claim 1, further comprising:

a drain electrode contacting the silicon, the drain electrode including a ferromagnetic detection contact capable of receiving the spin-polarized carriers, and further including a second silicide layer disposed between the ferromagnetic detection contact and the silicon substrate such that the spin-polarized carriers flowing into the ferromagnetic detection contact from the silicon substrate maintain spin polarization.

5. (Original) A system according to claim 1, further comprising:

a gate electrode positioned on the silicon substrate, the gate electrode capable of receiving a gate bias and applying an electric field across the silicon substrate such that spin-injected carriers flowing through the electric field tend to change spin orientation.

6. (Original) A system according to claim 1, further comprising:

an external field generator capable of applying an electric field across the silicon such that spin-injected carriers flowing through the electric field tend to change spin orientation.

7. (Original) A system according to claim 1, further comprising:

a nanowire polygate positioned adjacent the silicon and capable of applying a magnetic field across the silicon such that spin-injected carriers flowing through the electric field tend to change spin orientation.

8. (Original) A system according to claim1, wherein:

the silicide layer is a cobalt silicide layer.

9. (Original) A system according to claim 1, wherein:

the silicide layer is a nickel silicide layer.

10. (Original) A system according to claim 1, wherein:

the ferromagnetic metal contact is a cobalt ferromagnetic metal contact.

11. (Original) A system according to claim 1, wherein:

the ferromagnetic metal contact is a cobalt ferromagnetic metal contact.

12. (Original) A spin-based transistor, comprising:

a silicon substrate;

a source electrode on the silicon substrate, the source electrode including a ferromagnetic injection contact capable of injecting spin-polarized carriers into the silicon substrate, and further including a first silicide layer disposed between the ferromagnetic injection contact and the silicon substrate such that carriers injected into the silicon substrate maintain spin polarization;

a drain electrode on the silicon substrate, the drain electrode including a ferromagnetic detection contact capable of receiving spin-polarized carriers, and further including a second silicide layer disposed between the ferromagnetic detection contact and the silicon substrate such that carriers flowing into the ferromagnetic detection contact from the silicon substrate maintain spin polarization; and

a gate electrode positioned on the silicon substrate between the source electrode and gate electrode, the gate electrode capable of receiving a gate bias and applying an electric field across the silicon substrate between the source and gate electrodes such that carriers flowing through the electric field will change spin orientation.

Claims 13-20. (Canceled)